

## **ABSTRACT**

An ultra-thin flexible expanded graphite heating high resistance element is produced by a method including the steps of providing a flexible expanded graphite sheet having a surface adhered to a substrate; pulling apart the sheet and the substrate with a force sufficient to separate the adhered flexible expanded graphite sheet into a removed layer and a remainder layer adhered to the substrate; and optionally repeating the foregoing steps until the remainder layer has a thickness of about 0.01 mils to about 2 mils. A resistance heater for high voltage applications is also provided.